

# Chem-Impex International, Inc.

---

Tel: (630) 766-2112

E-mail: sales@chemimpex.com

Shipping and Correspondence:

935 Dillon Drive

Wood Dale, IL 60191

Fax: (630) 766-2218

Web site: www.chemimpex.com

Manufacturing site:

825 Dillon Drive

Wood Dale, IL 60191

---

## Certificate of Analysis

<b>Catalogue Number</b>	12435
<b>Lot Number</b>	000424-190902-36631
<b>Product</b>	<b>Fmoc-D-glutamic acid <math>\alpha</math>-allvl ester</b> Fmoc-D-Glu-OAll
<b>CAS Number</b>	204251-86-5
<b>Molecular Formula</b>	C <sub>23</sub> H <sub>23</sub> NO <sub>6</sub>
<b>Molecular Weight</b>	409.43

---

<b>Appearance</b>	White powder
<b>Solubility</b>	Clear solution (0.3 g in 2 mL DMF)
<b>Melting Point</b>	117.0 - 119.9 °C
<b>Water Content (Karl Fisher)</b>	0.18%
<b>Optical Rotation</b>	[ $\alpha$ ] <sub>D</sub> <sup>20</sup> = 20.6 ° (C=1 in DMF)
<b>Infrared Spectrum</b>	Conforms to structure
<b>Analysis by Mass Spectra</b>	Conforms to standard
<b>Loss on Drying</b>	0.15% (50 °C, 2 hr)
<b><sup>1</sup>H NMR</b>	Conforms to structure
<b>Chiral HPLC</b>	99.97% (ee)
<b>L-Enantiomer</b>	0.0341%
<b>Purity by HPLC</b>	99.17%
<b>Storage</b>	Store at 0 - 8 °C
<b>Remarks</b>	See material safety data sheet for additional information For laboratory use only

The foregoing is a copy of the Certificate of Analysis as provided by our supplier



**Bala Kumar**  
Quality Control Manager